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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,220	12/01/2003	Andrew J. Hutchinson	169.12-0611	2130

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EXAMINER

EVANS, JEFFERSON A

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 03/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/725,220	Applicant(s) HUTCHINSON ET AL.	
	Examiner Jefferson A. Evans	Art Unit 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-21 and 23-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10, 12-20 and 23-29 is/are rejected.
- 7) ☒ Claim(s) 7 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 1-10, 12-21, and 23-29 are pending.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2, 4, 5, 9, 12-14, 18-20, 23, 24, and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erpelding et al (U.S. 4,996,623) in view of Suzuki (U.S. 5,644,448), and further in view of Dockerty et al (U.S. 5,796,169) and/or Lemke (U.S. 6,024,584). Erpelding discloses (note figures 4 to 7) a suspension assembly comprising: a slider (110) supporting a read/write head; and a multi-layer laminate substrate having a base layer (116 and 118), an insulator layer (100) and a conductor layer (102), the laminate substrate further comprising an attachment region (the left end portion of the slider suspension assembly) for attaching to an actuator arm, a load beam region (the middle portion), a flexure region (the right end portion) for supporting the slider, and an interconnect path (103 and 104) extending along the flexure region, the load beam region and the attachment region wherein the interconnect path terminates at a plurality of connection points at the attachment region to provide an electrical attachment to the actuator arm (figures 3 and 4 clearly show the interconnect traces ending in the attachment region). Top and bottom as set forth in claim 2 are relative

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and as figures 3A, 3B, and 8 show, suspension assemblies are often utilized in multiples facing in opposite directions so as to read from opposing disk surfaces. A hinge (122), formed via reduced base thickness, is considered a void.

Erpelding does not provide details of the manner in which his plurality of connection points are attached to the actuator arm, and thus does not establish that the connection establishes both an electrical and mechanical connection.

Suzuki discloses head suspension assembly in which suspension connectors 36 lead to pads 37 in an attachment region which are connected pads 47 of an actuator arm connector 44 via the use of solder (column 5 – lines 5 to 12).

Dockerty (at abstract lines 10 and 11, and column 2 – lines 50 to 53) and Lemke (at column 4 – lines 23 to 27) both refer to the ability of solder connections to provide structural support.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize solder to connect the suspension multi-layer laminate connection points of Erpelding to conductors on an actuator arm, as taught by Suzuki. The motivation would have been: as evidenced by Suzuki and acknowledged by applicant on page 9 of the amendment filed 12-16-2005, solder was a conventional means for establishing electrical connections.

Applicant argues that solder electrical connections do not represent structural connections.

It would have been further obvious that solder connections of Erpelding in view of Suzuki would qualify as structural connections. The reasons are: the Examiner's

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position is that a solder connection is not just an electrical connection but is also a physical bond that provides some degree of structural support. Dockerty and Lemke have been cited to support the Examiner's contention that solder forms a connection that is not just electrical but is also structural in nature.

3. Claims 1-3, 5, 6, 8, 9, 12-17, 19, 20, 24, 25, 27, and 29 rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al (U.S. 5,864,446) in view of Suzuki, and further in view of Dockerty et al and/or Lemke. Endo discloses (note figures 6a and 6b) a suspension assembly comprising: a slider (44) supporting a read/write head; and a multi-layer laminate substrate having a base layer (42/45), an insulator layer (53) and a conductor layer (52), the laminate substrate further comprising an attachment region (45) for attaching to an actuator arm, a load beam region (42), a flexure region (43) for supporting the slider, and an interconnect path (47) extending along the flexure region, the load beam region and the attachment region wherein the interconnect path terminates at a plurality of connection points (47₁-47₄) at the attachment region to provide an electrical attachment to the actuator arm (as shown in figure 6A). Top and bottom as set forth in claim 2 are relative and as figure 11 shows suspension assemblies are often utilized in multiples facing in opposite directions so as to read from opposing disk surfaces. Stiffening rails along the sides of the suspension assembly are not labeled but are clearly depicted. The dummy patterns (52,53) are formed from the conductor layer, are not connected to the interconnect path, and can be considered stiffeners. Adhesive may be utilized to join the suspension to the actuator arm (column 7 – lines 12 to 20)

Endo does not provide details of the manner in which his plurality of connection points are attached to the actuator arm, and thus does not establish that the connection establishes both an electrical and mechanical connection.

Suzuki discloses head suspension assembly in which suspension connectors 36 lead to pads 37 in an attachment region which are connected pads 47 of an actuator arm connector 44 via the use of solder (column 5 – lines 5 to 12).

Dockerty (at abstract lines 10 and 11, and column 2 – lines 50 to 53) and Lemke (at column 4 – lines 23 to 27) both refer to the ability of solder connections to provide structural support.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize solder to connect the suspension multi-layer laminate connection points of Endo to conductors on an actuator arm, as taught by Suzuki. The motivation would have been: as evidenced by Suzuki and acknowledged by applicant on page 9 of the amendment filed 12-16-2005, solder was a conventional means for establishing electrical connections.

Applicant argues that solder electrical connections do not represent structural connections.

It would have been further obvious that solder connections of Endo in view of Suzuki would qualify as structural connections. The reasons are: the Examiner's position is that a solder connection is not just an electrical connection but is also a physical bond that provides some degree of structural support. Dockerty and Lemke

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have been cited to support the Examiner's contention that solder forms a connection that is not just electrical but is also structural in nature.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al.

Endo does not disclose his adhesive as being conductive.

Official Notice is given that it was notoriously old and well known in the prior art to utilize conductive glue in connecting a suspension assembly to an actuator arm.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a conductive glue in connecting the suspension assembly of Endo to an actuator arm. The motivation would have been: conductive glue was known to be utilized for grounding purposes.

In the Amendment filed 12-16-2005 applicant did not contest the Examiner's assertion of Official Notice concerning conductive glue. As a result applicant is considered to have accepted the Examiner's contention as reasonable.

Allowable Subject Matter

5. Claims 7 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jefferson A. Evans whose telephone number is 571-272-7574. The examiner can normally be reached on Monday to Friday, 9:00am to 5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A. L. Wellington can be reached on 571-272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Jefferson A. Evans', with a stylized flourish at the end.

JAE
February 23, 2006

Jefferson A. Evans
Primary Examiner
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**JEFFERSON EVANS
PRIMARY EXAMINER**